



Wansdyke School

Mathematics Policy

Date agreed: July 2019

Review Date: July 2020

Mathematics is a key life skill. Few things could be considered as important to master during a person's education. At Wansdyke we aim to develop in our children a deep understanding of the number system as well as proficiency in calculation, allowing them to be fluent in the fundamentals of mathematics. Children need to have conceptual understanding of mathematical principles as well as an ability to recall and apply knowledge accurately and consistently. They also need to reason mathematically, spot patterns, make generalisations and prove mathematical ideas in order to solve problems.

Intent:

At Wansdyke, it is our aim that children leave the school with a deep understanding of all areas within mathematics, being able to confidently access the content presented in their secondary education. We have high expectation and ambition for all our children, and want them all to achieve their full potential in maths during their time at Wansdyke School. We hold the belief that every child can successfully master the ideas within their year group's curriculum. We hope to cultivate a culture of enjoyment and confidence in learning mathematics from the pupils and staff, valuing its importance within school and the wider world. Also to develop a deep conceptual understanding of mathematical principles within our children. It is our hope to promote skills such as arithmetic proficiency, creativity and mathematical reasoning and consistency within mathematics lessons in the school.

Implementation:

The school uses the 2014 National Curriculum and EYFS Curriculum for directing the teaching of mathematics. The school will be using 'Power maths', which has been written to deliver the National Curriculum objectives, providing a robust and well-rounded curriculum. The scheme of work is focussed around a mastery approach to Mathematics where children are exposed to the same year group objective, with sufficient support and challenge to cater for all learners. The scheme is written around the three main mathematical concepts: fluency, reasoning and problem solving in the aim to ensure pupil master the different year group objectives. Teachers have high expectations through teaching to the appropriate yearly objectives and set work appropriate to the needs of the children in their class. The structure of the lessons are carefully considered, with representations and models used to aid understanding and varied examples to fully expose the underlying structure. Teachers use episodic lesson structure to build up ideas slowly and use assessment during regular independent practice. Material from supporting schemes such as 'White Rose' and 'Maths No Problem' are used to augment the independent work within a lesson. Opportunities for returning to, and expanding on prior knowledge and making explicit links is essential to allow concepts to enter the long-term memory.

Impact:

We expect the outcomes for children within the school to remain strong in every year group. Through the carefully structured curriculum and high quality teaching, we have already delivered results above national in every phase within the school. Children at Wansdyke enjoy and engage with mathematics because they experience success and support to achieve. It is our aim that the outcomes within maths will continue to be above the National average and that we achieve the vision set out in our intent statement.

Teaching

The structure and pedagogy of lessons are driven by the objectives being covered and the needs of the children. Learning objectives are made known to the children and they have an active say in generating the steps to success during the lesson. The maths mastery approach moves through learning in a slow and small steps, using a 'Ping Pong' approach to lessons.

Teaching should be matched to pupil's attainment, with challenging and supportive teaching, and appropriately timed intervention. Teachers should move through the CPA (Concrete, Pictorial and Abstract) model when delivering lessons. The methods, models, images and objectives are in line with the school calculation progression documents and appended materials. Teachers use both summative and formative assessment methods accurately to plan and adapt lessons.

Whenever appropriate, cross-curricular links are made and skills learned in mathematics are applied within other areas of the curriculum e.g. measuring in DT or collecting data in Science as part of the Statistics strand of the curriculum. Efficient and appropriate use of ICT should be utilised to enhance the lessons being taught e.g. interactive white boards, laptops, iPads and a range of software. Where appropriate, learning will be moved outside of the classroom into the outside learning environment.

Mastery Learning

The following traits are highly desirable within teacher's daily maths lessons:

- The pitch of the lesson is in line with year group expectations
- Prior knowledge is visited at the start of the lesson
- Children will be actively engaged in their learning.
- Carefully considered models and images are used during the input.
- Children are moved on from their starting point. They secure and deepen their understanding.
- Children should not be set for mathematics. Children should work in mixed ability pairs
- The lesson should incorporate teacher modelling, followed by independent practice, and then reflective discussion (Ping Pong style)
- Key sentence stems should be repeated by the children
- Effective sequences of lessons are designed to build on concepts and deepen understanding
- Lessons are adapted from previous lessons
- Differentiation should support children to meet the objective or apply the skill in an unfamiliar context. The children should not be completing vastly different learning.
- Children's thinking skills are developed by encouraging visual imagery, exploring strategies for tackling mental / oral questions, problem solving and investigative activities.
- Children should have access to the appropriate models and apparatus during all lessons.
- Children have opportunities to work independently and as a group
- Thoughtful questioning to deepen understanding or assess
- Carefully constructed questions and problems should form part of the independent work.

Special Needs

All children are encouraged to participate in mathematics activities, appropriate for their ability. Where appropriate, pupils remain within the classroom to complete their maths work. Teachers have a duty to provide quality first teaching within the classroom and through this, differentiate to cater for the range of ability in each class.

More able children are stretched by challenging work and extended questioning. Children's understanding of a concept will be deepened and broadened in a range of unfamiliar context. Children's learning is supported through concrete or symbolic representations where appropriate by the class teacher and manipulatives should be actively encouraged for pupils to use. Effective differentiated questioning should be used to support the lower attaining children. Less able pupils are further supported by focused group and the use of manipulatives.

Planning

Teachers follow the medium term teaching plans from White Rose which are amended as necessary. Teachers will use SMART flipcharts to plan their lessons. Lessons are planned according to the need of the class, using the tracker or Professor Assessor to ensure coverage of the curriculum is maintained. Teachers and TAs evaluate their lessons and pupil performance to inform future planning and teaching. Teacher's planning should follow the stipulations within the Staff Handbook.

Assessment and Record Keeping

Teachers assess children through a variety of ways including, marking, observations, discussions and assessment activities. Evaluation of the weekly plans and assessment activities help to identify areas in need of future reinforcement, these are noted on the medium term plans. Teachers should make use of Professor Assessor data to the tracker should be updated regularly to highlight objectives which have been mastered. Scrutiny of work is carried out during the year to ensure consistency and progression. Teacher's assessment and record keeping should follow stipulations within the Assessment Policy and the Staff Handbook.

Intervention and Pupil Premium

Children with specific learning difficulties within maths, whose progress or attainment is below their peers will be supported by the school's intervention. Children who receive additional funding through the Pupil Premium fund may receive intervention in mathematics if appropriate for the child. Pupils underachieving should be raised within school data meetings. Interventions and TAs are deployed based on the needs and performance of the class, using summative data.

Resources

Each class has its own mathematics resources as well as access to the central resources. Funding is available to staff to identify own class needs for resources. Number resources are specific for each class and a progression of these can be found in the calculations policy. Geometry and Measures resources are stored centrally in the 'Purple Pod'. Other resources are funded in line with the SDP and identified whole school needs. Class resources should be easily accessible and clearly labelled for both pupils and adults to find and use. Each class has regular timetabled access to the ICT suite and iPads – all with a range of appropriate software.

All classes have their own mathematics display areas in prominent locations within the classroom. These should be referenced as part of lessons and replicate the models and images from within a lesson. Mathematics should have a high profile within the class. Displays should include both supportive resources for children in class as well as examples of pupil's work. Displays should be in line with classroom environment checklists and the staff handbook.

Equal Opportunities All children will be given equal access to the mathematics curriculum within their own ability.

Home Learning

See Home Learning Policy

Related policies

Assessment Policy

SEN Policy

Classroom environment checklist

Home Learning Policy

Signed: *D Court* Chair of Governors